women and 12 men), with a mean age of 32 years (range, 16-61 years), underwent hypercoagulable testing. Some abnormality of coagulation was discovered in 14 patients (25.5%), comprising 12 women and two men, with a mean age of 27 years (range 16-46 years). A factor V Leiden mutation was present in six patients, protein S deficiency in four, and a plasminogen-activator inhibitor-1 deficiency in two. One patient each had protein C deficiency and anticardiolipin antibodies, factor V mutation, factor II mutation, and antiphospholipid antibodies. Patients were initially treated with first rib recession and scalenectomy but not with venous reconstruction. At 2 weeks postoperatively, patients were assessed by venography for possible venoplasty of stenotic or occluded veins. In the 14 patients with hypercoagulability, 10 (71%), had stenotic or occluded veins. At 2 weeks, 32 of 41 patients (78%) tested for hypercoagulability, but with negative findings, had stenotic or occluded veins. Of the 82 patients not tested for hypercoagulability at 2 weeks, 53 (61%) had stenotic or occluded veins by duplex scan assessment.

Comment: The authors found some patients with abnormalities of coagulation in their series. Their suggestion that hypercoagulability testing be considered in some patients with axillosubclavian vein thrombosis therefore seems reasonable. The data here give us some idea of what one will find if one initiates hypercoagulability testing in selected patients with spontaneous axillary/subclavian vein thrombosis. The nature of the data and the limited analysis possible from this sort of data makes this basically a "hypothesis seeking" study. It does not really tell you what to do with that information once you find it or if the "hypercoagulability" was the primary inciting problem, a contributing problem, or would not really be much of a problem at all in the absence of compression of the vein!

Statins Reduce Neurologic Injury in Asymptomatic Carotid Endarterectomy Patients

Heyer EJ, Mergeche JL, Bruce SS, et al. Stroke 2013;44:1150-2.

Conclusion: Preoperative statin use is associated with less neurologic injury after carotid endarterectomy (CEA) for asymptomatic stenosis.

Summary: There is considerable controversy about the current therapeutic index of CEA for asymptomatic carotid stenosis. Given what everyone agrees is a relatively narrow therapeutic index for CEA in the treatment of patients with asymptomatic carotid stenosis, there is considerable interest in adjunctive measures to potentially improve even further outcomes of CEA for asymptomatic carotid stenosis. The Asymptomatic Carotid Surgery Trial suggested a reduction in perioperative risk of stroke and death from 6% to 2% for those on "lipid-lowering agents" (Halliday A et al, Lancet 2010;376:1074-84). However, data on 1252 patients undergoing CEA for asymptomatic stenosis in Canada failed to demonstrate a protective effect of statins (Kennedy J et al, Stroke 2005;36:2072-6). In addition to stroke, effects of CEA and other carotid interventions on postoperative cognitive dysfunction are also of interest. Potential effects of statins on postoperative cognitive dysfunction have not been studied previously. In this study, the authors sought to determine whether statins were neuroprotective in a cohort of asymptomatic CEA patients taking statin medications. This study defined neurologic injury after CEA as both clinical stroke and significant cognitive dysfunction. Agreeing to participate in the study were 328 asymptomatic patients with carotid stenosis scheduled for elective CEA. Patients were evaluated for perioperative stroke and cognitive dysfunction. Cognitive dysfunction was determined by a battery of neuropsychometric tests performed preoperatively and 1 day postoperatively (Heyer EJ et al, Arch Neurol 2002;59:217-22). Patients taking a statin medication at the time of their CEA had a lower incidence of clinical stroke (0.0% vs 3.1%; $P = .02$) and a lower incidence of cognitive dysfunction (11% vs 20.0%; $P = .03$). Application of a multiple variant regression model indicated statin use was significantly associated with decreased odds of cognitive dysfunction (odds ratio, 0.51; 95% confidence interval, 0.27-0.96; $P = .04$).

Comment: Previous studies have suggested that postoperative cognitive dysfunction can predict disability and perhaps even early death (Steinmetz J et al, Anesthesiology 2009;110:548-55). Therefore, although this was a single-center study and such things as reasons for statin medication and duration of statin medication, as well as dosages of statin medications, were not controlled, the data are intriguing enough that more formal evaluation on the effects of statin medications in preserving cognitive function in CEA patients, while controlling for the obvious variables of dosage, duration and type of statin medication, would seem worthwhile.

Nationwide Outcomes of Surgical Embolectomy for Acute Pulmonary Embolism

Kilic A, Shah AS, Conte JV, et al. J Thorac Cardiovasc Surg 2013;145:373-7.

Conclusion: There is a nationwide inpatient mortality rate of 27.2% after pulmonary embolectomy. Death after pulmonary embolectomy is affected by factors other than arena of care.

Summary: Acute pulmonary embolism (PE) causes ~300,000 deaths each year in the United Sates (Heit JA et al, US Blood 2005;106:267a). Surgical pulmonary embolectomy is an option for patients with severe PE and contraindications to thrombolysis or who have persistent hypotension after initial therapy. Previous outcomes reported for surgical pulmonary embolectomy have generally been limited to small patient cohorts. In the present study, the authors evaluated nationwide outcomes of surgical embolectomy for acute PE. The authors studied adult patients undergoing surgical embolectomy for acute PE from 1999 to 2008. Patients were identified in the weighted Nationwide Inpatient Sample. The primary end point was in-patient mortality. Multivariate logistic regression analysis was conducted to identify independent predictors for patient mortality. During the study period, 2709 eligible patients were identified as undergoing surgical embolectomy for acute PE. Mean age was 57.0 ± 16.0 years, and 1242 (48.8%) were women. Before surgical embolectomy, 10.3% of the patients had undergone thrombolysis. Overall inpatient mortality was 27.2%. By multivariate analysis, increased Charlson Comorbidity Index (odds ratio, 1.37; 95% confidence interval, 1.12-1.69; $P = .003$) increased the odds of inpatient death. Black patients were more than twofold more likely to die during hospitalization than white patients (odds ratio, 2.29; 95% confidence interval, 1.18-4.46; $P = .02$). Univariate analysis found age, payment type, hospital location (urban vs rural), hospital embolectomy volume, and surgical embolectomy volume were associated with in-patient mortality (each $P < .2$). None of these factors, however, correlated with mortality in the multivariate model.

Comment: Many variables that one would expect to be associated with increased mortality for an operation with high mortality were, in fact, found not to influence the mortality of surgical embolectomy for acute PE. This likely relates to the fact that no surgeon or hospital has a large volume of experience with this particular procedure. There were in fact only 2.3 cases performed each year in hospitals that performed the procedure. This is likely too few cases for pathways of care, surgical expertise, and anesthesia expertise to generate an effect. The authors suggest that it may be for prudent for centers with qualified surgeons to avoid delays in treatment rather than transfer care because of a perception of improved outcomes. However, the opposite may also be true, in that development of a regional center for surgical pulmonary embolectomy may allow acquisition of sufficient number of cases in a single center to actually improve outcomes of this procedure.

Surgical Never Events in the United States

Mehtsun WT, Ibrahim AM, Diener-West M, et al. Surgery 2013;153:465-72.

Conclusion: Patient and provider characteristics may help guide prevention strategies for surgical "never events."

Summary: Surgical "never events" include retained foreign body, wrong site surgery, wrong patient surgery, and wrong procedure operations. Despite agreement that these are always avoidable, they persist within real-world surgical practice. "Never events" clearly can be catastrophic for a patient but also destructive to a surgeon's career and a hospital's reputation. They may be a surrogate marker for unsafe hospital systems and a poor safety culture (Reason J, Qual Health Care 1995;4:80-90). This study addressed surgical "never events" with respect to the financial burdens they may place on the health care system (malpractice claim payment) and characteristics of providers involved with occurrence of surgical "never events." The authors used the National Practitioner Databank, a federal repository of medical malpractice claims, to identify malpractice settlements and judgments of surgical "never events." Patient outcomes, payment amounts, and provider characteristics were evaluated. The authors were able to identify 9744 paid malpractice settlements and judgments for surgical "never events." This was for the period of 1990 to 2010. Malpractice payments for surgical "never events" totaled $1.3 billion. Death occurred in 6.6% of patients, permanent injury in 32.9%, and temporary injury in 59.2%. The authors estimate, based on literature rates of surgical adverse events resulting in paid malpractice claims, that 4082 surgical "never events" occur each year in the United States. With respect to malpractice payments, increased malpractice claim payments were associated with severe patient outcomes and claims involving a physician with multiple malpractice reports. Of physicians named in a surgical "never event" claim, 12.4% were later named in at least one future surgical "never event" claim.

Comment: It has been suggested that medical errors occur when there is a faulty system in a context of a weak culture for safety at an institutional level (Gosbee J, Qual Saf Health Care 2002;11:352-4). The problem may be greater than alluded to in this study, because only 4% of serious preventable adverse events result in complaints (Bismark MM et al, Qual Saf Health Care 2006;15:17-22). It is the responsibility of hospitals to support a culture of safety and the responsibility of physicians to support this culture for the benefit of their patients.